

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Currently Amended) An optical functional device comprising:
a first port,
a second port,
a third port,
a fourth port,
a first splitter branching said first port to a first arm and a second arm,
a second splitter branching said second port to said first arm and said second arm,
a third splitter branching said first arm to said third port,
a fourth splitter branching said first arm to said fourth port,
a first semiconductor optical amplifier disposed between said third and fourth
splitters, on said first arm,
a second semiconductor optical amplifier disposed between said first and second
splitters, on said second arm, and
a phase control element disposed between said ~~first semiconductor optical~~
~~amplifier and said second splitter on said first arm, wherein constant light is input from~~
~~one of said first port and said second port, and input signal light is input from one of a~~
~~first site between said first splitter and said first semiconductor optical amplifier and a~~
~~second site between said first semiconductor optical amplifier and said phase control~~
~~element~~ and fourth splitters.

2. (Original) The optical functional device according to claim 1, said optical functional device being employed as a wavelength converter.

3. (Currently Amended) An optical functional device comprising:
a first port,

a second port,
a third port,
a fourth port,
a first splitter branching said first port to a first arm and a second arm,
a second splitter branching said second port to said first arm and said second arm,
a third splitter branching said first arm to said third port,
a fourth splitter branching said first arm to said fourth port,
a first semiconductor optical amplifier disposed between said third and fourth
splitters on said first arm,
a second semiconductor optical amplifier disposed between said first and second
splitters on said second arm,
a first phase control element disposed between said ~~first semiconductor optical~~
~~amplifier and said second splitter on said first arm~~ and fourth splitters, and
a second phase control element disposed between said second semiconductor
optical amplifier and said second splitter on said second arm, ~~wherein constant light is~~
~~input from one of said first port and said second port, and input signal light is input from~~
~~one of a first site between said first splitter and said first semiconductor optical amplifier~~
~~and a second site between said first semiconductor optical amplifier and said first phase~~
~~control element.~~

4. (Original) The optical functional device according to claim 3, said optical functional device being employed as a wavelength converter.

Claim 5 (Cancelled).